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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/943,962	08/31/2001	Lee Masoian	143603.01000	1544
24283	7590	02/24/2005	EXAMINER	
PATTON BOGGS 1660 LINCOLN ST SUITE 2050 DENVER, CO 80264			WIN, AUNG T	
			ART UNIT	PAPER NUMBER
			2645	

DATE MAILED: 02/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/943,962

Applicant(s)

MASOIAN ET AL.

Examiner

Aung T Win

Art Unit

2645

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 06/18/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 9 recites the limitation "the diode" which is insufficient antecedent basis for this limitation in the claim.
2. Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 16 recited the limitation "N-number of first and second transceivers" is unclear what N-number stands for. For the purpose of the examination, the examiner assumed N is equal to one.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 8, 13-17, 18, 26-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parrott in view of VanZeeland.

Regarding Claims 1, 8, 13-17, Parrott discloses a wireless network with Adaptor for transmitting radio frequency (RF) signals between a plurality of communication nodes (computing devices) [Figure 3] in which Adaptor [Paragraph 0034] comprises a first transceiver (RF transceiver [0037] operable to receive a first modulated RF signal (RF signal RF data system) and convert the first modulated RF signal to a first modulated to IR signal with programmable microprocessor [Paragraph 0035]. Parrott further discloses that such adaptor includes RF transceiver [0037] operable to receive and transmit RF signal, the programmable microprocessor [Paragraph 0035] to seamlessly convert data and voice information between IR and RF formats corresponds to the received RF and IR signals, and IR transceiver [Paragraph 0036] able to generate and receive IR signals to and from a plurality of computing devices operating within a predetermined proximity. Parrott further teaches that each computer devices has IR transceiver [e.g. 460 in Figure 4] (i.e., second transceiver) for receiving IR signal and converts the IR signal to the signal that can be processed by the computer device. Parrott fail to teach the second transceiver to receive the first modulated IR signal from the first transceiver and convert the first modulated IR signal to a second modulated RF signal.

VanZeeland discloses the control signal repeater system in which the IR receiver [14 in Figure 2] (IR portion of the repeater system) to receive IR signal and generate RF signal for the RF transmitter to transmit RF signal containing the control information transmitted by the controller 12 for the controlled device. [Figure 2] [Column 3, Line 58-68].

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Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system with the Adaptor as taught by Parrott to implement a first transceiver operable to receive a first modulated RF signal and to transmit first modulated IR signal, and the repeater system as taught by VanZeeland to implement the second transceiver operable to receive the first modulated IR signal from the first transceiver and to convert into second modulated RF signal that is substantially equivalent to the first modulated RF signal. One of the ordinary skilled in the art would have been motivated to do this for wirelessly connecting the computing device over an infrared communication link [0014] and to use the transceivers as the repeater for extension of the operating distance of the system.

Claims 18 and 26, 28-30 are the method claims corresponding to Claim 1 is rejected for the same reasons as stated above because the claimed steps reads on the corresponding means on Claim 1.

Claim 27 is the method claims corresponding to Claim 16 is rejected for the same reason as stated above because the claimed step reads on the corresponding means on Claim 16.

Regarding Claim 31, Parrott discloses a wireless network with Adaptor for transmitting radio frequency (RF) signals between a plurality of communication nodes (computing devices) [Figure 3] in which Adaptor (a first transceiver) [Paragraph 0034] comprises RF transceiver [0037] operable to receive a first modulated RF signal (RF signal RF data system) and convert the first modulated RF signal to a first modulated to IR signal with programmable microprocessor [Paragraph 0035] and IR transceiver [Paragraph 0036] able to generate and receive IR signals and convert the second modulated IR signal to a second modulated RF signal with programmable microprocessor [Paragraph 0035]. Parrott further discloses that each computer devices has IR transceiver [e.g. 460 in Figure 4] (i.e., second transceiver) for receiving IR signal and converts the IR signal to the signal that can be processed by the computer device. Parrott fail to teach the second transceiver. Parrott further teaches that such adaptor includes RF transceiver [0037] operable to receive and transmit RF signal, the programmable microprocessor [Paragraph 0035] to seamlessly convert data and voice information between IR and RF formats corresponds to the received RF and IR signals, and IR transceiver [Paragraph 0036] able to generate and receive IR signals to and from a plurality of computing devices.

VanZeeland discloses the control signal repeater system in which the IR receiver [14 in Figure 2] (IR portion of the repeater system) to receive IR signal and generate RF signal for the RF transmitter to transmit RF signal containing the control information transmitted by the controller 12 for the controlled device. [Figure 2] [Column 3, Line 58-68].

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Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system with the Adaptor as taught by Parrott to implement a first transceiver and the repeater as taught by VanZeeland to implement the second transceiver operable to receive the first modulated IR signal from the first transceiver and convert the first modulated IR signal to a third modulated RF signal which is substantially equivalent to the first modulated RF signal utilizing the microprocessor as taught by Parrott; and a fourth modulated RF signal and convert the fourth modulated RF signal to the second modulated RF signal that is substantially equivalent to the fourth modulated RF signal utilizing the microprocessor as taught by Parrott. One of the ordinary skilled in the art would have been motivated to do this for wirelessly connecting the computing device over an infrared communication link to use the transceivers as the repeater for extension of the operating distance of the system.

Claim 32 is the method claims corresponding to Claim 31 is rejected for the same reasons as stated above because the claimed steps reads on the corresponding means on Claim 31.

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4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parrott in view of VanZeeland as applied to Claim 8 above and further in view of Nagy.

Regarding Claim 9, Parrott as modified by VanZeeland discloses IR receiver portion (IR receiver) of the repeater comprising an IR sensitive device (inherent to receive and transmit IR signal). However Parrott as modified by VanZeeland fails to teach the generating of RF signal by modulating a voltage magnitude across the diode.

Nagy discloses supplying the square wave voltage to the diode so as to square wave modulate the frequency of RF signal between the desired frequency range [Column 1, Line 62-67]. Moreover, applying voltage across the diode to generate the signal is well-known to the skilled in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to further modify the second receiver to generate the RF signal by modulating a voltage magnitude across the diode to transmit the RF signal in desired frequency range.

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5. Claims 2-4, 7, 10-12, 19- 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parrott in view of VanZeeland as applied to Claim 1 above and further in view of Oh et al.

Regarding Claims 2, 3 and 4, Parrott as modified by VanZeeland as applied to Claim 1 does not disclose a first signal source and a mixer circuit.

Oh et al. discloses the a system (Radio frequency generator) for transmitting modulated radio frequency (RF) signals comprising: A transceiver (transmitter and receiver) operable to receive a modulated RF signal (frequency of reception radio signal RX-RF) [Figure 4] wherein the first transceiver comprises: a first signal source (GPS receiver to receive timing signal and supply the signal to Local Oscillators) operable to supply a reference signal (f5 generated from GPS receiver and Local Oscillators) [Column 3, Line 47-53] [Column 6, Line 9-21] and a first mixer circuit portion (Mixer 58) coupled to receive the first modulated RF signal and the reference signal and operable to convert the modulated RF signal to an intermediate RF signal having a lower principle frequency than the modulated RF signal [Figure 4][Column 6, Line 9-21].

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system as taught by Parrott and VanZeeland to demodulate the RF signal with the generated reference signal as taught by the Oh et al. One of the ordinary skilled in the art would have been motivated to do this for generating of desired frequency.

Claims 19, 20, and 21 are the method claims corresponding to Claim 2, 3 and 4 are rejected for the same reasons as stated above because the claimed steps reads on the corresponding means on Claim 2, 3 and 4.

Regarding Claim 7, Parrott as modified by VanZeeland and as further modified by Oh et al. discloses a low pass filter in which the low pass filter is utilized the final stage of down-converting process of the receiver end. Moreover, low-pass filter is well-known to one of ordinary skilled in the art to filter unwanted high frequency components. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to further modify the system by implementing the low-pass filter in the transceiver coupled to filter unwanted high frequency components at the receive end as taught by Oh et al. before converting RF signal to IR signal utilizing the Microprocessor as taught by Parrott.

Claim 22 is the method claim corresponding to Claim 7 is rejected for the same reasons as stated above because the claimed steps reads on the corresponding means on Claim 7.

Regarding Claims 10, 11 and 12, Parrott as modified by VanZeeland and as further modified by Oh et al. discloses the a system (Radio frequency generator) for

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transmitting modulated radio frequency (RF) signals comprising: A transceiver (transmitter and receiver) operable to receive a modulated RF signal (frequency of reception radio signal RX-RF) [Figure 4] wherein the transceiver comprises: a signal source (GPS receiver to receive timing signal and supply the signal to Local Oscillators) operable to supply a reference signal (f_5 generated from GPS receiver and Local Oscillators) [Column 3, Line 47-53] [Column 6, Line 9-21] and a mixer circuit portion (Mixer 58) coupled to receive the modulated RF signal and the reference signal and operable to convert the modulated RF signal to an intermediate RF signal [Figure 4][Column 6, Line 9-21]. Oh et al. clearly teaches that utilization of low pass filter (LPF) [Figure 4]. Moreover, low-pass filter is well-known to one of ordinary skilled in the art to filter unwanted high frequency components.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the second transceiver as modified by VanZeeland to further modify as taught by Oh et al. to implement a second signal source (GPS receiver) to supply a second reference signal and a second mixer circuit portion (Mixer) coupled to received the fourth modulated RF signal and the second reference signal and operable to convert the fourth modulated RF signal to the second modulated RF signal. One of the ordinary skilled in the art would have been motivated to do this for processing of desired frequency.

Claims 23, 24 and 25 are the method claims corresponding to Claims 8, 10 and 11 are rejected for the same reasons as stated above because the claimed steps reads on the corresponding means on Claims 8, 10 and 11.

6. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parrott in view of VanZeeland and Oh et al. as applied to Claim 4 above and further in view of Scifres.

Regarding claim 5 and 6, Parrott as modified by VanZeeland and Oh et al. discloses all the limitations in Claim 4 except for the teaching that IR transmitter portion comprises a variable intensity IR source wherein IR signal is generated by the intensity IR source and the variable intensity IR source comprises a laser diode.

Scifres discloses an infrared laser diode in wireless local area network wherein each infrared transmitter having a laser source with multiple laser diodes (laser emitters) for generating signal [See Abstract and Claims].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize laser diode as taught by Scifres in the system of Parrott as modified by VanZeeland and Oh et al. One of the ordinary skilled in the art would have been motivated to use laser diode since laser diodes can be modulated at a much higher frequency [Column 2, Line 41-44].

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Borras et al.	Patent No.:	5,301,353
Dockery	Patent No.:	4,809,359
Harrington	Patent No.:	4,897,883
Schultheiss	Patent No.:	US 6,208,384 B1
White et al.	Patent No.:	US 6,400,968

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aung T Win whose telephone number is (703) 605-4306. The examiner can normally be reached on 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang can be reached on (703) 305-4895. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Aung T. Win

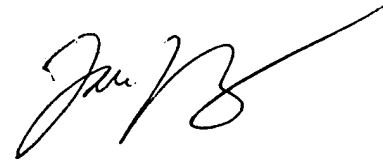
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February 4, 2005

A handwritten signature in black ink, appearing to read 'Fan Tsang', with a long, sweeping horizontal stroke extending to the right.

FAN TSANG
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600